



Title: COMPOSITIONS AND METHODS FOR THE TREATMENT AND DIAGNOSIS OF BREAST CANCER
Express Mail No. EV207711513US
Inventor(s): Tony N. Frudakis et al. Serial No. 09/810,936 Docket No. 210121.419C11

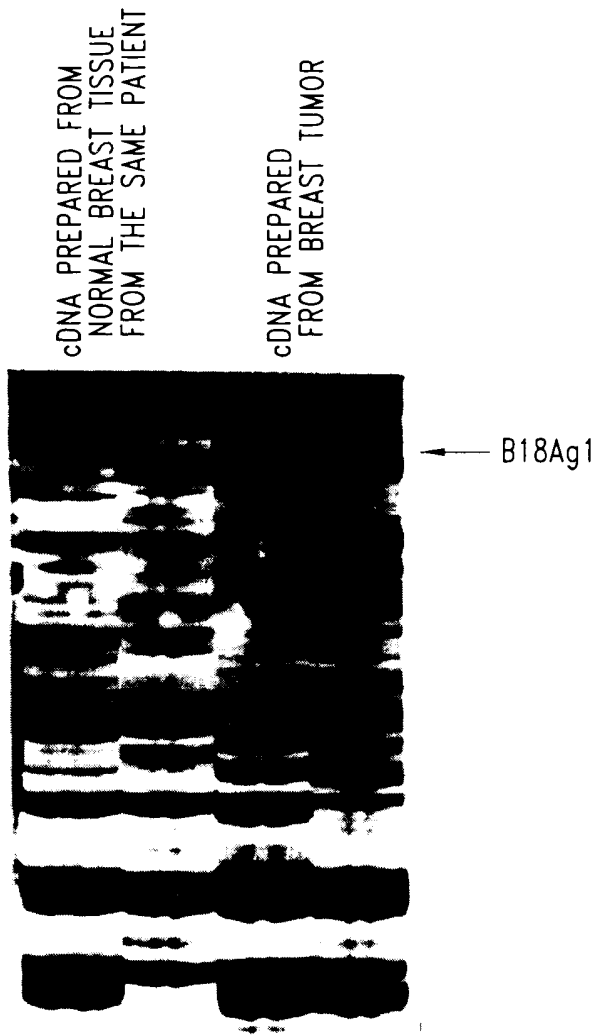


Fig. 1



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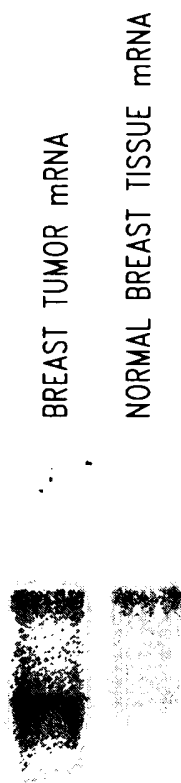


Fig. 2

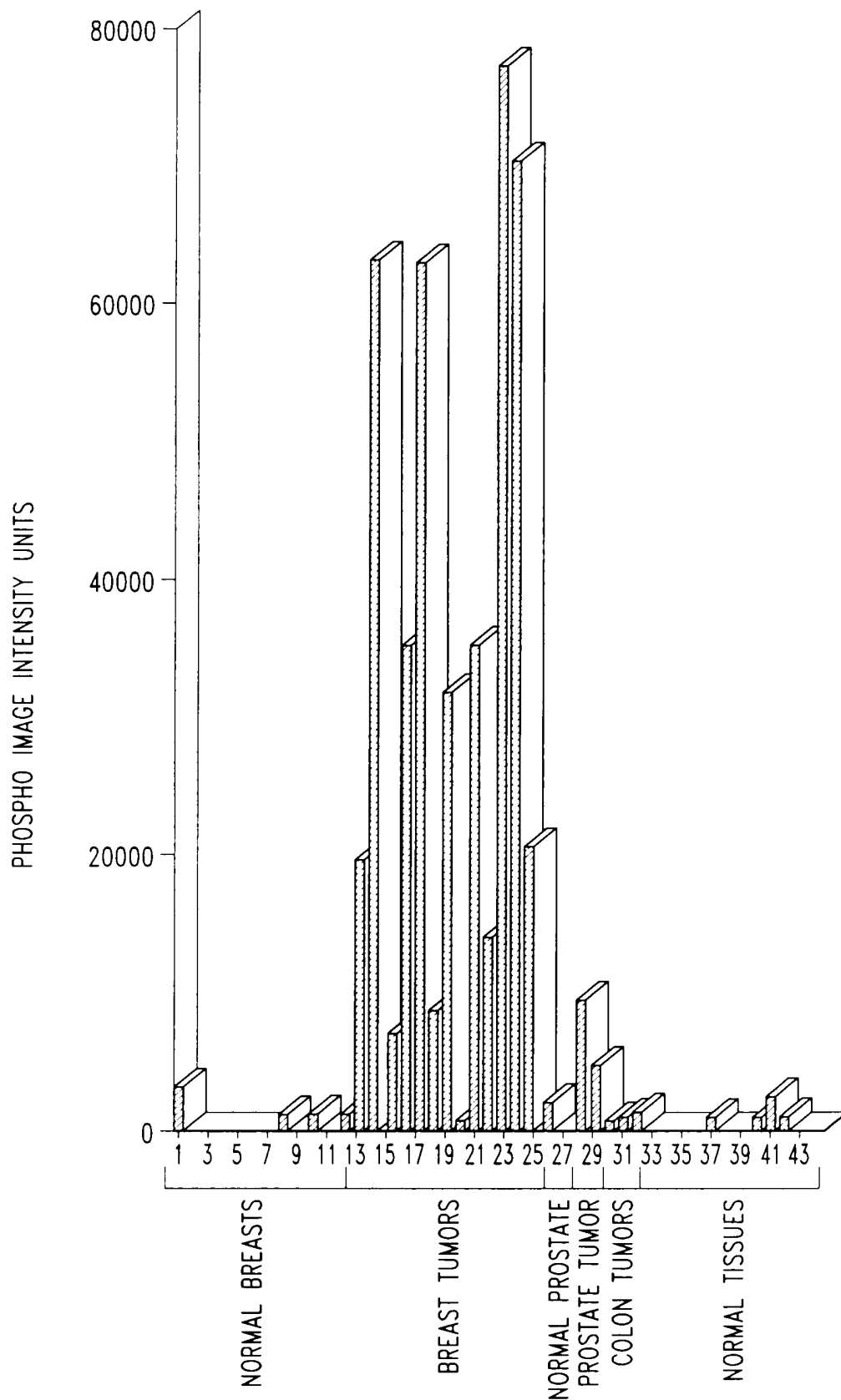


Fig. 3



GENOMIC CLONE MAP

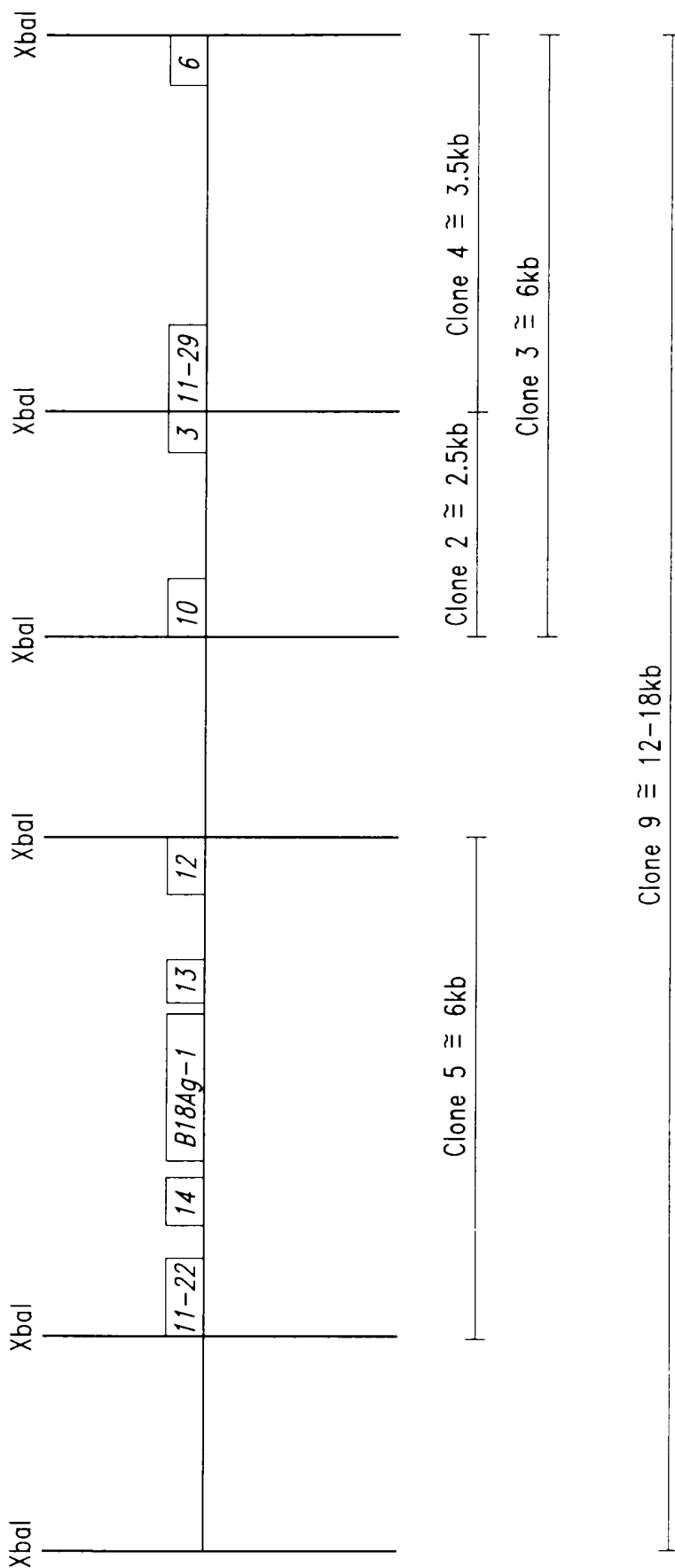


Fig. 4

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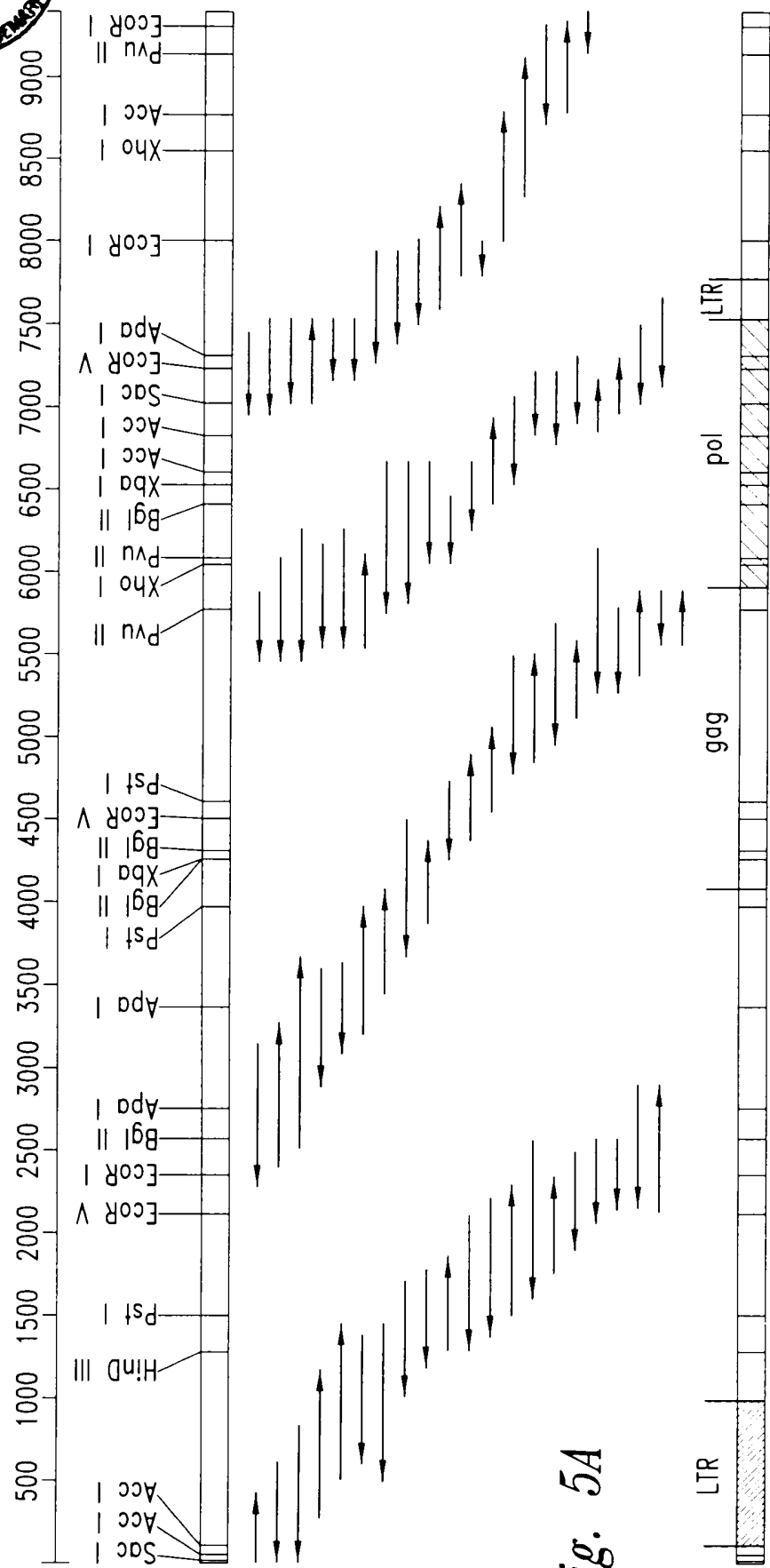


Fig. 5A

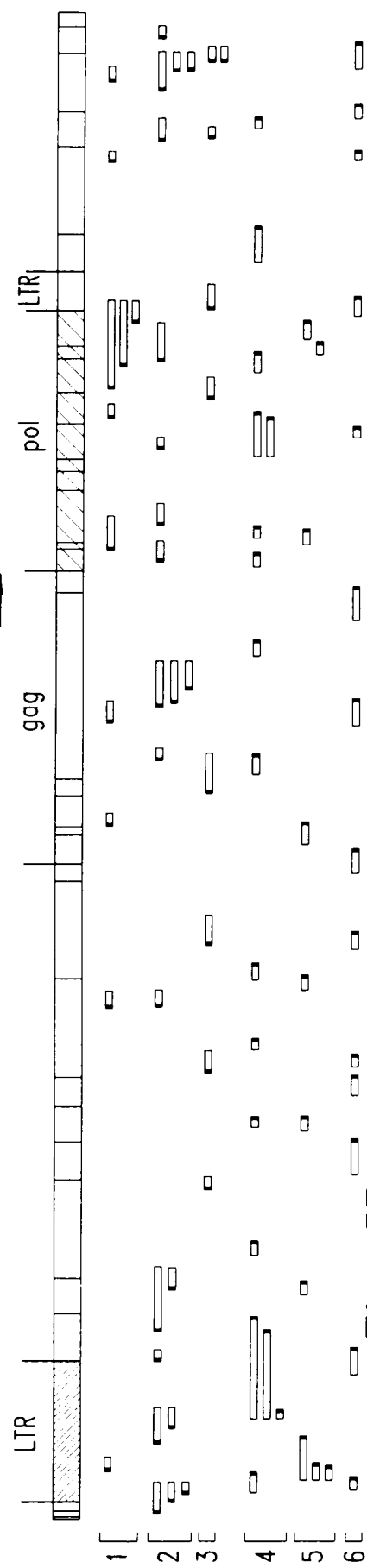


Fig. 5B



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NUCLEOTIDE SEQUENCE OF THE REPRESENTATIVE
BREAST-TUMOR SPECIFIC cDNA B18Ag1

TTA GAG ACC CAA TTG GGA CCT AAT TGG GAC CCA AAT TTC TCA AGT GGA 48
Leu Glu Thr Gln Leu Gly Pro Asn Trp Asp Pro Asn Phe Ser Ser Gly
1 5 10 15

GGG AGA ACT TTT GAC GAT TTC CAC CGG TAT CTC CTC GTG GGT ATT CAG 96
Gly Arg Thr Phe Asp Asp Phe His Arg Tyr Leu Leu Val Gly Ile Gln
20 25 30

GGA GCT GCC CAG AAA CCT ATA AAC TTG TCT AAG GCG ATT GAA GTC GTC 144
Gly Ala Ala Gln Lys Pro Ile Asn Leu Ser Lys Ala Ile Glu Val Val
35 40 45

CAG GGG CAT GAT GAG TCA CCA GGA GTG TTT TTA GAG CAC CTC CAG GAG 192
Gln Gly His Asp Glu Ser Pro Gly Val Phe Leu Glu His Leu Gln Glu
50 55 60

GCT TAT CGG ATT TAC ACC CCT TTT GAC CTG GCA GCC CCC GAA AAT AGC 240
Ala Tyr Arg Ile Tyr Thr Pro Phe Asp Leu Ala Ala Pro Glu Asn Ser
65 70 75 80

CAT GCT CTT AAT TTG GCA TTT GTG GCT CAG GCA GCC CCA GAT AGT AAA 288
His Ala Leu Asn Leu Ala Phe Val Ala Gln Ala Ala Pro Asp Ser Lys
85 90 95

AGG AAA CTC CAA AAA CTA GAG GGA TTT TGC TGG AAT GAA TAC CAG TCA 336
Arg Lys Leu Gln Lys Leu Glu Gly Phe Cys Trp Asn Glu Tyr Gln Ser
100 105 110

GCT TTT AGA GAT AGC CTA AAA GGT TTT 363
Ala Phe Arg Asp Ser Leu Lys Gly Phe
115 120

Fig. 6

NUCLEOTIDE SEQUENCE OF THE REPRESENTATIVE
BREAST-TUMOR SPECIFIC cDNA B17Ag1

TCTCCTAGGC TGGGCACAGT GGCTCATACC TGTAATCCTG ACCGTTTCAG AGGCTCAGGT 60
GGGGGGATCG CTTGAGCCCA AGATTCAAG ACTAGTCTGG GTAACATAGT GAGACCCCTAT 120
CTCTACGAAA AAATAAAAAA ATGAGCCTGG TGTAAGTGCA CACACCAGCT GAGGAGGGAG 180
AATCGAGCCT AGGAGA 196

Fig. 7



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NUCLEOTIDE SEQUENCE OF THE REPRESENTATIVE
BREAST-TUMOR SPECIFIC cDNA B17Ag2

TCTCCTAGGC TTGGGGGCTC TGA	60
CTAGAAA TTCAAGGAAC CTGGGATTCA AGTCCA	120
ACTG	
TGACACCAAC TTACACTGTG GNCTCCAATA	180
AACTGCTTCT TTCCTATTCC CTCTCTATTA	240
AATAAAATAA GGAAAACGAT GTCTGTGTAT	300
AGCCAAGTCA GNTATCCTAA AAGGAGATAC	360
TAAGTGACAT TAAATATCAG AATGTAAAC	388
CTGGGAACCA GGTCCCAGC CTGGGATTAA	
ACTGACAGCA AGAAGACTGA ACAGTACTAC	
TGTGAAAAGC CCGAAGNGGC AATATGTTCA	
CTCTACCGTT GAAGGATGGC TGGGAGAATG	
AATGCTCTGT CCCCAGTCC CAAGCTCACT	
TACTATACCT CCTTTATAGC CTAGGAGA	

Fig. 8

NUCLEOTIDE SEQUENCE OF THE REPRESENTATIVE
BREAST-TUMOR SPECIFIC cDNA B13Ag2a

TAGTAGTTGC CTATAATCAT GTTCTCATT	60
ATTTTCACAT TTTATTAACC AATTCTGTT	120
TACCTGAAA AATATGAGGG AAATATATGA	180
AACAGGGAGG CAATGTTTCA ATAATTGATC	240
ACAAGATATG ATTTCTACAT CAGATGCTCT	300
TTCCTTTTCT GTTTATTTC TTTTATTTC	337
GGTTGTGGGG TCGAATGTAA TAGCTTTGTT	
TCAAGAGAGA GTTTTGGCAG TTTCTGTAGC	
TTCTGACACT GCTCATGTCT CCAGGCATCT	
ATTGCACTT TAGGAGGTGT CGTGGGAGAC	
TGAGAGGTCT ATTTTTCCTA TATTTGGGCA	
ACTACTA	

Fig. 9



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NUCLEOTIDE SEQUENCE OF THE REPRESENTATIVE
BREAST-TUMOR SPECIFIC cDNA B13Ag1b

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TAGTAGTTGC CATACAGTGC CTTTCCATTT ATTTAACCCC CACCTGAACG GCATAAACTG      60
AGTGTTGAGC TGGTGTTTTT TACTGTAAAC AATAAGGAGA CTTTGCTCTT CATTTAAACC      120
AAAATCATAT TTCATATTTT ACGCTCGAGG GTTTTACCAG GTTCCTTTTT ACACTCCTTA      180
AAACAGTTTT TAAGTCGTTT GGAACAAGAT ATTTTTTCTT TCCTGGCAGC TTTTAACTT      240
ATAGCAAATT TGTGTCTGGG GGAAGTCTGG TCACTGTTTC TCACAGTTGC AAATCAAGGC      300
ATTTGCAACC AAGAAAAAAA AATTTTTTTG TTTTATTTGA AACTGGACCG GATAAACGGT      360
GTTTGGAGCG GCTGCTGTAT ATAGTTTTAA ATGGTTTATT GCACCTCCTT AAGTTGCACT      420
TATGTGGGGG GGGGNTTTTG NATAGAAAGT NTTTANTCAC ANAGTCACAG GGACTTTTNT      480
CTTTTGGNNA CTGAGCTAAA AAGGGCTGNT TTTCGGGTGG GGGCAGATGA AGGCTCACAG      540
GAGGCCTTTC TCTTAGAGGG GGAAGTCTCT A              571

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Fig. 10

NUCLEOTIDE SEQUENCE OF THE REPRESENTATIVE
BREAST-TUMOR SPECIFIC cDNA B13Ag1a

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TATATATTTA ATAACCTAAA TATATTTTGA TCACCCACTG GGGTGATAAG ACAATAGATA      60
TAAAAGTATT TCCAAAAAGC ATAAAACCAA AGTATCATAC CAAACCAAAT TCATACTGCT      120
TCCCCACCCC GCACTGAAAC TTCACCTTCT AACTGTCTAC CTAACCAAAT TCTACCTTTC      180
AAGTCTTTGG TGGTGCTCA CTAAGTCTTT TTTTNTTTT TTTNTTTTGG AGATGGAGTC      240
TGGCTGTGCA GCCCAGGGGT GGAGTACAAT GGCACAACCT CAGCTCACTG NAACCTCCGC      300
CTCCCAGGTT CATGAGATTC TCCTGNTTCA GCCTTCCCAG TAGCTGGGAC TACAGGTGTG      360
CATCACCATG CCTGGNTAAT CTTTTTTNGT TTTNGGGTAG AGATGGGGGT TTTACATGTT      420
GGCCAGGNTG GTNTCGAACT CCTGACCTCA AGTGATCCAC CCACCTCAGG CTCCCAAAGT      480
GCTAGGATTA CAGACATGAG CCACTGNGCC CAGNCCTGGT GCATGCTCAC TTCTCTAGGC      540
AACTACTA              571

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Fig. 11



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NUCLEOTIDE SEQUENCE OF THE REPRESENTATIVE
BREAST-TUMOR SPECIFIC cDNA B11Ag1

TTCCGTTATG CACATGCAGA ATATTCTATC GGTACTTCAG CTATTACTCA TTTTGATGGC	60
GCAATCCGAG CCTATCCTCA AGATGAGTAT TTAGAAAGAA TTGATTTAGC GATAGACCAA	120
GCTGGTAAGC ACTCTGACTA CACGAAATTG TTCAGATGTG ATGGATTAT GACAGTTGAT	180
CTTTGGAAGA GATTATTAAG TGATTATTTT AAAGGGAATC CATTAAATCC AGAATATCTT	240
GGTTTAGCTC AAGATGATAT AGAAATAGAA CAGAAAGAGA CTACAAATGA AGATGTATCA	300
CCAACTGATA TTGAAGAGCC TATAGTAGAA AATGAATTAG CTGCATTAT TAGCCTTACA	360
CATAGCGATT TTCCTGATGA ATCTTATATT CAGCCATCGA CATAGCATT CCTGATGGGC	420
AACCTTACGA ATAATAGAAA CTGGGTGCGG GGCTATTGAT GAATTCATCC NCAGTAAATT	480
TGGATATNAC AAAATATAAC TCGATTGCAT TTGGATGATG GAATACTAAA TCTGGCAAAA	540
GTAACTTTGG AGCTACTAGT AACCTCTCTT TTTGAGATGC AAAATTTTCT TTTAGGGTTT	600
CTTATTCTCT ACTTTACGGA TATTGGAGCA TAACGGGA	638

Fig. 12

NUCLEOTIDE SEQUENCE OF THE REPRESENTATIVE
BREAST-TUMOR SPECIFIC cDNA B3CA3c

ACTGATGGAT GTCGCCGGAG GCGAGGGGCC TTATCTGATG CTCGGCTGCC TGTTCTGAT	60
GTGCGCGGCG ATTGGGCTGT TTATCTCAAA CACCGCCACG GCGGTGCTGA TGGCGCTAT	120
TGCCTTAGCG GCGGCGAAGT CAATGGGCGT CTCACCTAT CCTTTTGCCA TGGTGGTGGC	180
GATGGCGGCT TCGGCGGCGT TTATGACCCC GGTCTCCTCG CCGGTTAACA CCCTGGTGCT	240
TGGCCCTGGC AAGTACTCAT TTAGCGATTT TGTCAAAATA GGCGTG	286

Fig. 13



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NUCLEOTIDE SEQUENCE OF THE REPRESENTATIVE
BREAST-TUMOR SPECIFIC cDNA B9CG1

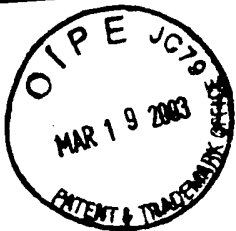
TCGGTCATAG CAGCCCCCTT	60
TTCTCAATTT CATCTGTCAC TACCCTGGTG TAGTATCTCA	
TAGCCTTACA TTTTATAGC CTCCTCCCTG GTCTGTCTTT TGATTTTCCT GCCTGTAATC	120
CATATCACAC ATAAGTCAA GTAAACATTT CTAAAGTGTG GTTATGCTCA TGCTACTCCT	180
GTGNCAGAA ATAGTTTCCA TTACCGTCTT AATAAAATTC GGATTGTTC TTTNCTATTN	240
TCACTCTTCA CCTATGACCG AA	262

Fig. 14

NUCLEOTIDE SEQUENCE OF THE REPRESENTATIVE
BREAST-TUMOR SPECIFIC cDNA B9CG3

TCGGTCATAG CAAAGCCAGT GGTTTGAGCT CTCTACTGTG TAAACTCCTA AACCAAGGCC	60
ATTTATGATA AATGGTGGCA GGATTTTAT TATAACATG TACCCATGCA AATTCCTAT	120
AACTCTGAGA TATATTCTTC TACATTTAAA CAATAAAAT AATCTATTTT TAAAAGCCTA	180
ATTTGCGTAG TTAGGTAAGA GTGTTAATG AGAGGGTATA AGGTATAAAT CACCACTCAA	240
CGTTTCTCTG CCTATGACCG A	261

Fig. 15



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NUCLEOTIDE SEQUENCE OF THE REPRESENTATIVE
BREAST-TUMOR SPECIFIC cDNA B2CA2

TACAACGAGG CGACGTCGGT AAAATCGGAC ATGAAGCCAC CGCTGGTCTT TTCGTCCGAG	60
CGATAGGCGC CGGCCAGCCA GCGGAACGGT TGCCCGGATG GCGAAGCGAG CCGGAGTTCT	120
TCGGACTGAG TATGAATCTT GTTGTGAAAA TACTCGCCGC CTTCGTTTCA CGACGTCGCG	180
TCGAAATCTT CGANCTCCTT ACGATCGAAG TCTTCGTGGG CGACGATCGC GGTCAGTTCC	240
GCCCCACCGA AATCATGGT GAGCCGGATG CTGNCCCCGA AGNCCTCGTT TGTN	294

Fig. 16

NUCLEOTIDE SEQUENCE OF THE REPRESENTATIVE
BREAST-TUMOR SPECIFIC cDNA B3CA1

TACAACGAGG CGACGTCGGT AAAATCGGAC ATGAAGCCAC CGCTGGTCTT TTCGTCCGAG	60
CGATAGGCGC CGGCCAGCCA GCGGAACGGT TGCCCGGATG GCGAAGCGAG CCGGAGTTCT	120
TCGGACTGAG TATGAATCTT GTTGTGAAAA TACTCGCCGC CTTCGTTTCA CGACGTCGCG	180
TCGAAATCTT CGANCTCCTT ACGATCGAAG TCTTCGTGGG CGACGATCGC GGTCAGTTCC	240
GCCCCACCGA AATCATGGT GAGCCGGATG CTGNCCCCGA AGNCCTCGTT TGTN	294

Fig. 17



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NUCLEOTIDE SEQUENCE OF THE REPRESENTATIVE
BREAST-TUMOR SPECIFIC cDNA B3CA2

TACAACGAGG CGACGTCGGT AAAATCGGAC ATGAAGCCAC CGCTGGTCTT TTCGTCCGAG	60
CGATAGGCGC CGGCCAGCCA GCGGAACGGT TGCCCGGATG GCGAAGCGAG CCGGAGTTCT	120
TCGGACTGAG TATGAATCTT GTTGTGAAAA TACTCGCCGC CTTCGTTTCA CGACGTCGCG	180
TCGAAATCTT CGANCTCCTT ACGATCGAAG TCTTCGTGGG CGACGATCGC GGTCAGTTCC	240
GCCCCACCGA AATCATGGTT GAGCCGGATG CTGNCCCCGA AGNCTCGTT TGTN	294

Fig. 18

NUCLEOTIDE SEQUENCE OF THE REPRESENTATIVE
BREAST-TUMOR SPECIFIC cDNA B3CA3

TTGGGTAAAG GGAGCAAGGA GAAGGCATGG AGAGGCTCAN GCTGGTCCTG GCCTACGACT	60
GGGCCAAGCT GTCGCCGGGG ATGGTGGAGA ACTGAAGCGG GACCTCCTCG AGGTCCTCCG	120
NCGTTACTTC NCCGTCCAGG AGGAGGGTCT TTCCGTGGTC TNGGAGGAGC GGGGGGAGAA	180
GATNCTCCTC ATGGTCNACA TCCC	204

Fig. 19

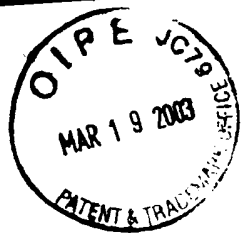


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NUCLEOTIDE SEQUENCE OF THE REPRESENTATIVE
BREAST-TUMOR SPECIFIC cDNA B4CA1

TGGATTGGTC AGGAGCGGGT AGAGTGGCAC CATTGAGGGG ATATTCAAAA ATATTATTTT	60
GTCCTAAATG ATAGTTGCTG AGTTTTTCTT TGACCCATGA GTTATATTGG AGTTTATTTT	120
TTAACTTTCC AATCGCATGG ACATGTTAGA CTTATTTTCT GTTAATGATT NCTATTTTTA	180
TTAAATTGGA TTTGAGAAAT TGGTTNTTAT TATATCAATT TTTGGTATTT GTTGAGTTTG	240
ACATTATAGC TTAGTATGTG ACCA	264

Fig. 20



Title: COMPOSITIONS AND METHODS FOR THE TREATMENT AND DIAGNOSIS OF BREAST CANCER

Express Mail No. EV20771151305

Inventor(s): Tony N. Frudakis et al. Serial No. 09/810,936 Docket No. 210121.419C11

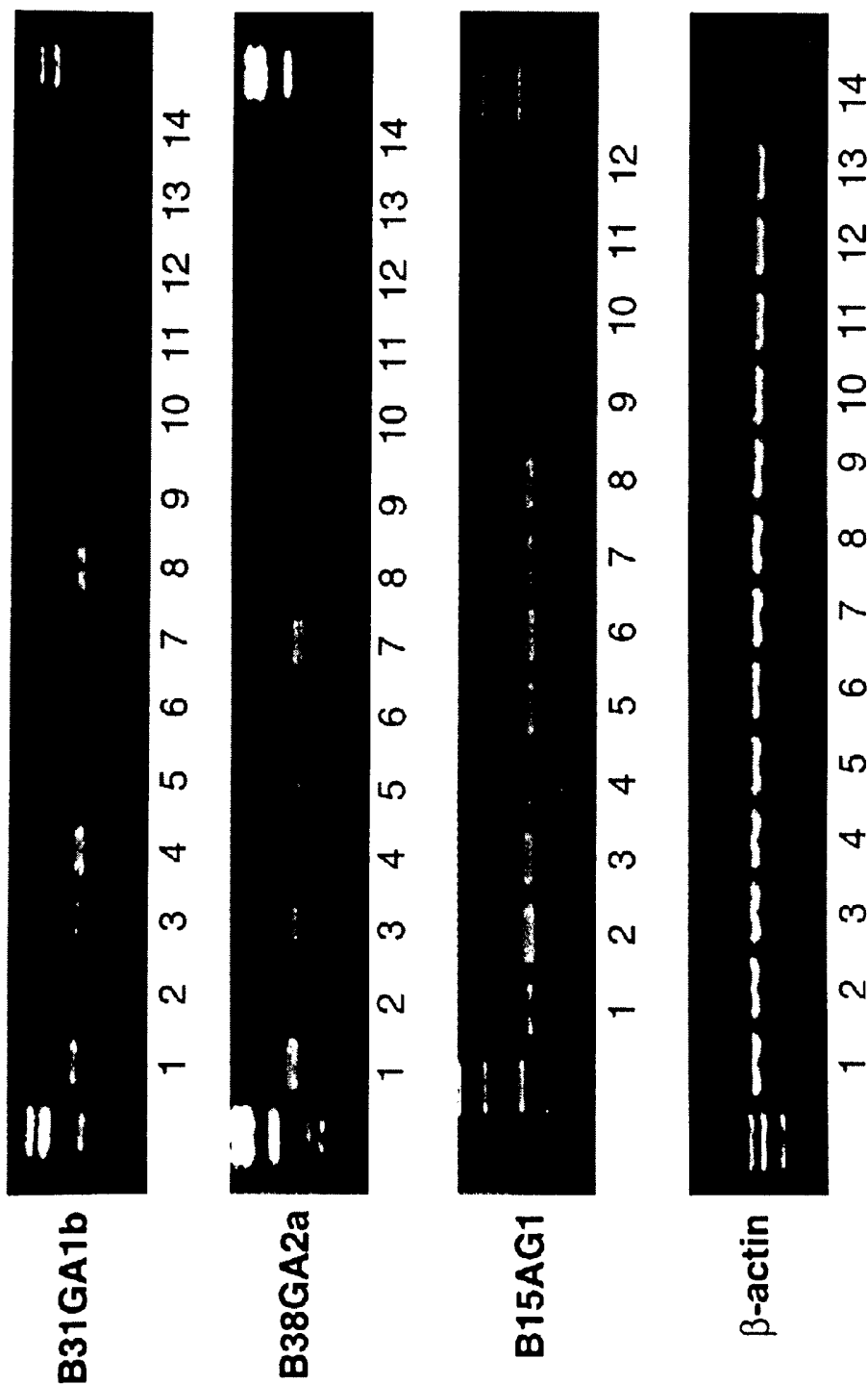


Fig. 21A



Title: COMPOSITIONS AND METHODS FOR THE TREATMENT AND DIAGNOSIS OF BREAST CANCER
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Inventor(s): Tony N. Frudakis et al. Serial No. 09/810,936 Docket No. 210121.419C11

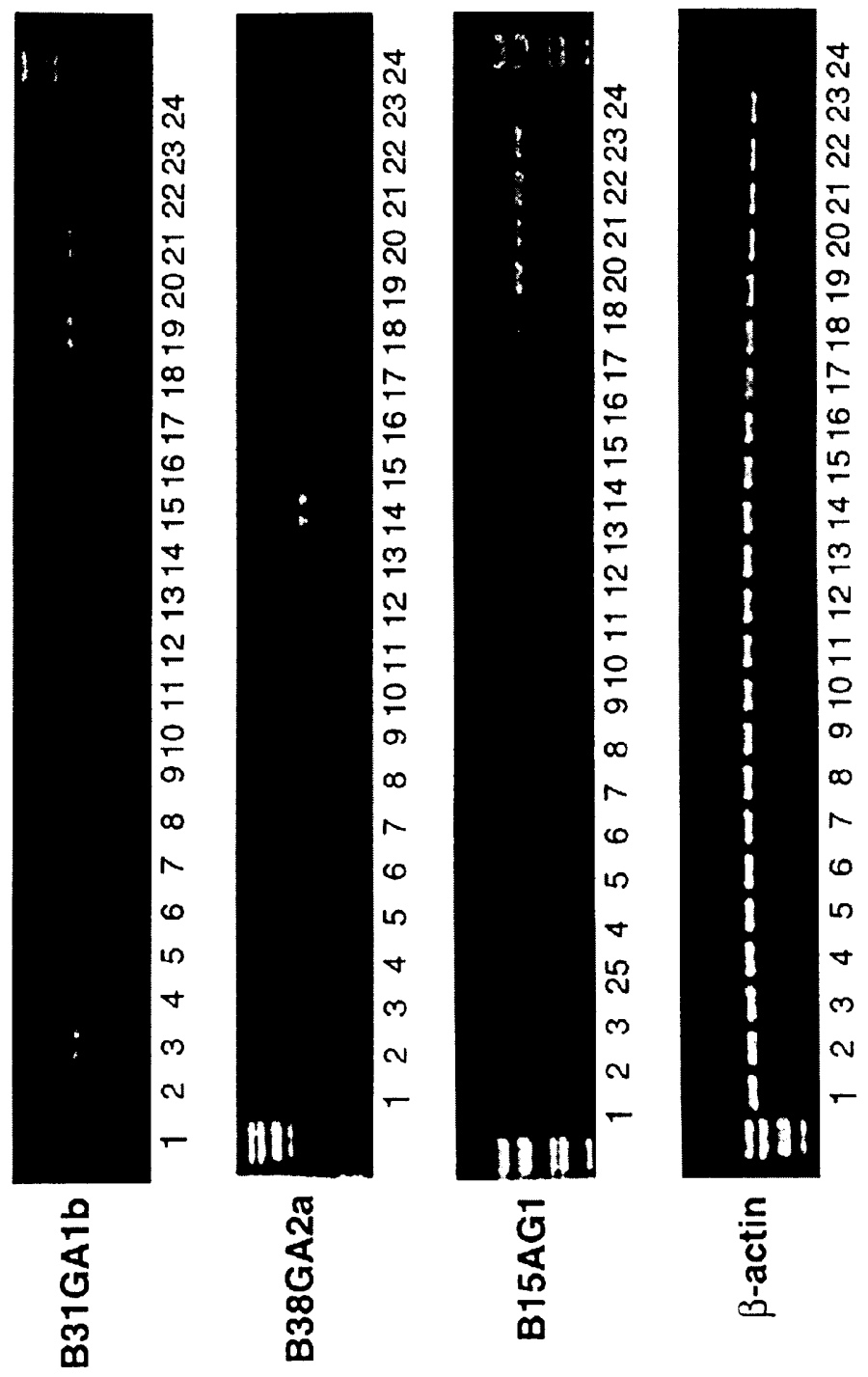


Fig. 21B

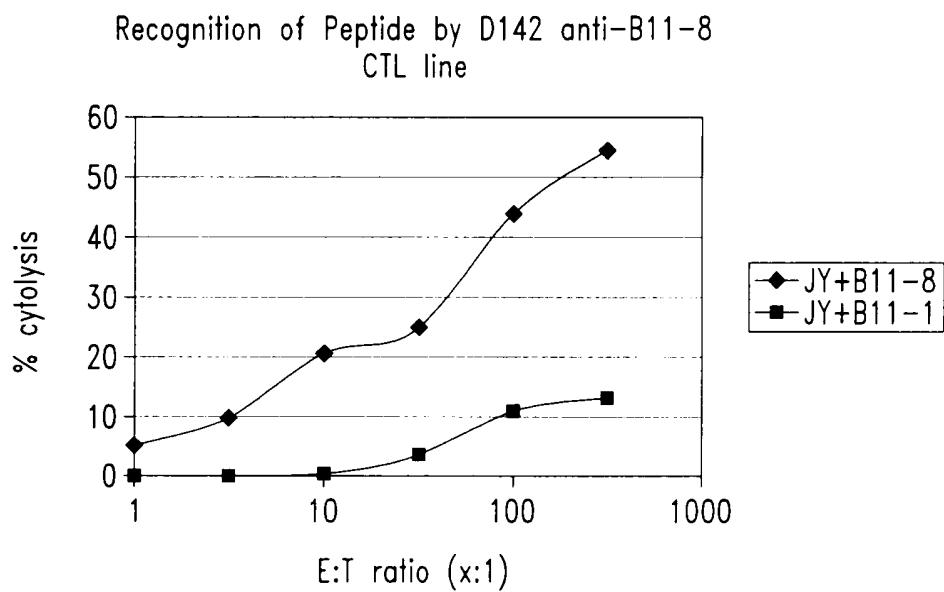


Fig. 22



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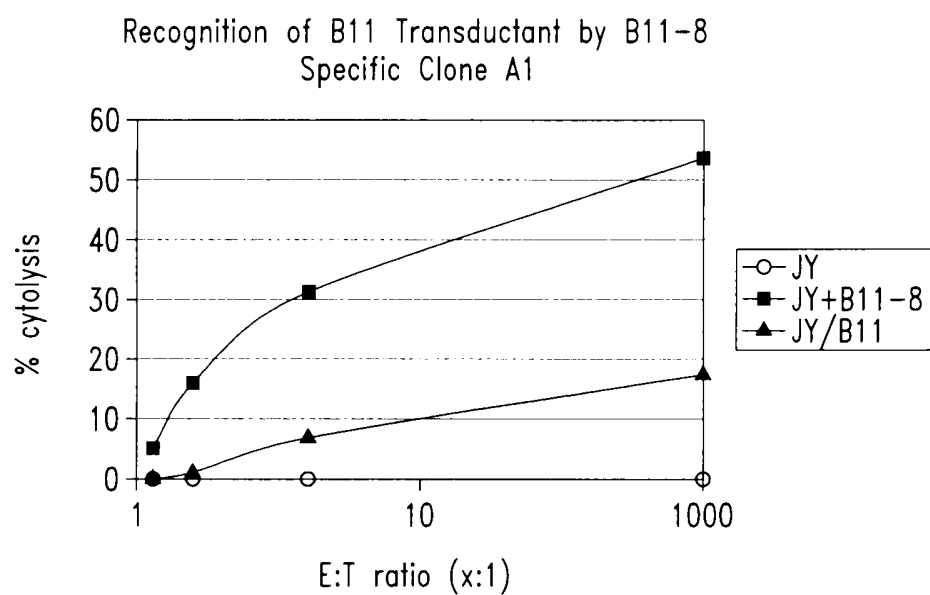


Fig. 23

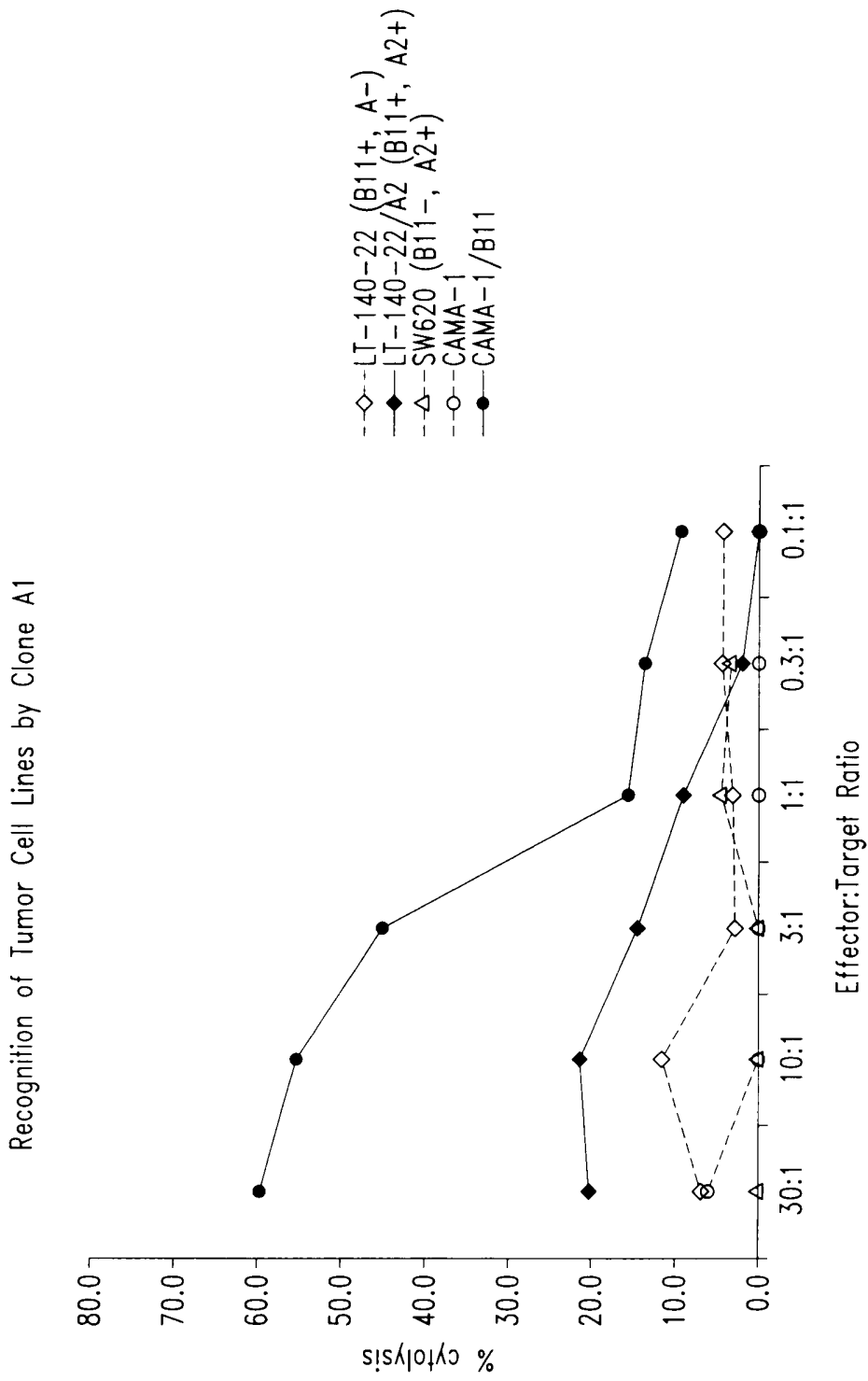
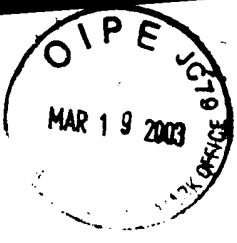


Fig. 24